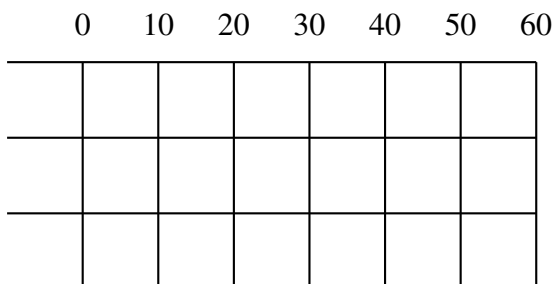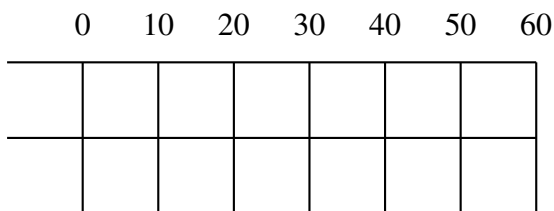# MATH F113X: Introduction to Scheduling

Goal Learn about the following terminology: schedule, digraph, processors, finishing time, optimal finishing time, optimal schedule, idle time, critical path, critical time.

1. **Motivating Example** Fixing a Flat Bike Tire

label	task	time	dependence
A	buy a replacement tube patch kit	20 minutes	
B	find tools	5 minutes	
C	remove tire and tube	10 minutes	
D	replace tire and new tube	10 minutes	
E	repair old tube	10 minutes	

MATH F113X: Introduction to Scheduling

2. Terminology

   (a) **schedule**

   (b) **digraph**

   (c) **processors**

   (d) **finishing time**

   (e) **optimal finishing time and optimal schedule**

   (f) **idle time**

   (g) **critical path**

   (h) **critical time**

3. **General Example**: Create a digraph. Make a valid schedule with TWO processors. Determine values of finishing time, idle time and critical time.

label/task	time	dependence
A	2	
B	1	
C	2	
D	3	A
E	6	A,B
F	8	B,C
G	5	E,F

```
    0  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20
 ┌──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┐
 │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │
 ├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤
 │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │  │
 └──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┘
```